CROSS-LINKED HYALURONIC ACID-LAMININ GELS AND USE THEREOF IN CELL CULTURE AND MEDICAL IMPLANTS

1. CROSS-REFERENCE TO RELATED APPLICATION

This application is a continuation of US application no. 10/445,394 filed May 23, 2003, an application which is a continuation-in-part of US application no. 10/437,663 filed May 13, 2003, an application which is a continuation of International Application PCT/IL01/01050 filed November 13, 2001, which application claims the benefit of US provisional application 60/248,447 filed November 14, 2000. This application also claims the benefit of US provisional application 60/382,341 filed May 23, 2002. The entire content of each application is expressly incorporated herein by reference thereto.

2. FIELD OF THE INVENTION

The present invention concerns universal biocompatible matrices comprising cross-linked hyaluronic acid-laminin gels, processes of making these gels and uses thereof for clinical applications including as implants for guided tissue regeneration, for tissue engineering and for coating of medical devices, as well as in biotechnology.

3. BACKGROUND OF THE INVENTION

The ability to induce and guide tissue regeneration is an unmet medical need, particularly in systems such as the central nervous system and the cardiovascular system where loss of function results in severe debilitation or death.

Neuronal cell death as a result of injury, ischemia or degeneration within the central nervous system (CNS) is generally considered irreversible. Nerve regeneration is largely considered an unattainable goal within the CNS, due to the inability of these cell types to multiply after maturation, which occurs early in life. Axonal injury within the central nervous system is also generally thought to be irreversible when it involves severance of the axons. Various reports of success in nerve regeneration in animal models have not yet led to any satisfactory therapeutic approach to this problem, though it is envisaged that implants or transplants containing viable neurons or their progenitors, possibly derived from human embryonic stem cells, may one day provide an option for attaining CNS regeneration.